

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
3 February 2005 (03.02.2005)

PCT

(10) International Publication Number  
**WO 2005/009138 A1**

(51) International Patent Classification<sup>7</sup>: **A23J 1/20**,  
A23C 19/028, A23J 1/22

(21) International Application Number:  
PCT/NZ/2004/000154

(22) International Filing Date: 21 July 2004 (21.07.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
527159 24 July 2003 (24.07.2003) NZ

(71) Applicants and

(72) Inventors: CARR, Allstair, James [NZ/NZ]; Private Bag 11 029, Dairy Farm Road, Palmerston North (NZ). COKER, Christina, June [NZ/NZ]; Private Bag 11 029, Dairy Farm Road, Palmerston North (NZ). KELLS, Brian, Ashley [NZ/NZ]; Private Bag 11 029, Dairy Farm Road, Palmerston North (NZ). ELSTON, Peter, Dudley [NZ/NZ]; Private Bag 11 029, Dairy Farm Road, Palmerston North (NZ). FERREIRA, Lillian, de Barros [BR/NZ]; Private Bag 11 029, Dairy Farm Road, Palmerston North (NZ).

(74) Agents: CALHOUN, Douglas, C et al.; A J Park, 6th Floor Huddart Parker Building, Post Office Square, P O Box 949, Wellington, 6015 (NZ).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AI., AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DI., DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: PROCESS FOR PREPARING CONCENTRATED MILK PROTEIN INGREDIENT AND PROCESSED CHEESE MADE THEREFROM

(57) Abstract: Process for preparing a concentrated milk protein ingredient comprising the steps of: providing a membrane retentate solution having *kappa*-casein milk protein, adjusting the divalent ion content of said protein solution to a predetermined level at which no gel is formed after treatment with milk clotting enzyme, adding a food grade milk clotting enzyme under conditions where *kappa*-casein is converted to *para-kappa* casein while remaining in solution, terminating the conversion by removal or inactivation of the enzyme and concentrating said solution. The resultant milk protein concentrate ingredient is used in the production of cheese.

WO 2005/009138 A1